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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,637	03/16/2004	Takashi Yashiki	250268US	1131
22850	7590	05/31/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			MORILLO, JANELLE COMBS	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	

1742

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/800,637

**Applicant(s)**

YASHIKI, TAKASHI

**Examiner**

Janelle Combs-Morillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) 6-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by XP-002278686 (XP'686) optionally in view of teaching reference "ASM Handbook: Vol. 2" p 1169.

XP'686 teaches a high purity Ti alloy with 0.009% Fe max (see Table on bottom of 1st page). XP'686 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. XP'686 is drawn to a high purity titanium alloy also known as "iodide Ti" or "electrolytic Ti" (see XP'686, 1<sup>st</sup> paragraph), and though XP'686 does not specify the limits of Nb, and Co, the examiner points out that "ASM Handbook Vol. 2" p 1169 mentions that "iodide Ti" or "electrolytic Ti" have (strict) known impurity limits of Fe, Si, Ca, Cu, Mg, Mn, Sn, Zr, C, O, N, and Cl, with a balance consisting of Ti (see Table 49, all the elements added together =100.000 %). Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686.

Concerning the limitation of an oxide film, XP'686 does not teach forming an oxide layer on said Ti alloy is mandatory. More particularly, XP'686 teaches the formation of a thin film is optional (see XP'686 1<sup>st</sup> column, "corrosion resistance"), and when desired, is formed by heating in air at temperatures >315°F (>157°C, in other words said oxide layer does not automatically occur under normal conditions). Therefore, because XP'686 teaches an embodiment with

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substantially no oxide layer, XP'686 meets the limitation of a surface oxide film of 170Å or below.

Because XP'686 teaches a narrow range of Fe that overlaps the instant range "with sufficient specificity" (see MPEP 2131.03) and because Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686, it is held that XP'686 anticipates the instant claims.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over XP'686 optionally combined with ASM Vol. 2. XP'686 and ASM Vol. 2 are discussed above.

XP'686 does not specify said high purity Ti alloy is used as an external wall or reinforcing member of a building. However, XP'686 teaches that said alloy is processed into sheet, and has a minimum YS of 130 MPa and minimum UTS of 270-350 MPa (2<sup>nd</sup> column, see Table). It would have been obvious to one of ordinary skill in the art to use said high purity Ti alloy sheet taught by XP'686 as an external wall or reinforcing member of a building, because XP'686 teaches said alloy has good strength properties.

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5. Claims 1, 4, 5, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'573.

JP'573 teaches a pure titanium alloy building material sheet comprising (in weight%): 0.01-0.06% Fe (100-600 ppm Fe, abstract, claim 1 of JP'573). Additionally, JP'573 teaches examples with 105-571 ppm Fe in Table 1, which fall within the presently claimed range of Fe. JP'573 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. JP'573 does not mention the formation of an oxide layer, and therefore meets the presently claimed limitation of a film  $\leq 170\text{\AA}$ . Because JP'573 teaches overlapping alloying ranges, it is held that JP'573 has created a prima facie case of obviousness of the presently claimed invention.

Concerning claims 17 and 18, JP'573 teaches said high purity Ti alloy is used as a building material, such as roofing and outer wall material (see [0001]). Therefore, JP'573 meets the instant limitation of an external wall or reinforcing member of a building.

6. Claim 1, 4, 5, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over (XP'686 and ASM Vol. 2) or (JP'573) in view of JP10-008234 (JP'234). XP'686, ASM Vol. 2, and JP'573 are discussed above.

Neither JP'573 nor XP'686 mention the formation of an oxide coating. However, JP'234 teaches a method of forming an oxide coating on a titanium alloy in order to prevent discoloration, wherein said oxide coating has a thickness of  $\geq 20\text{\AA}$  (see examples, abstract), which overlaps the presently claimed limit of  $170\text{\AA}$  or below. It would have been obvious to one of ordinary skill in the art to form an oxide layer, as taught by JP'234, on the high purity Ti

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alloys taught by JP'573 or XP'686, because JP'234 teaches that said thin oxide layer prevents discoloration for a long period of time (abstract).

Claims 4 and 5 are discussed above.

Claims 17 and 18 are discussed above.

7. Claims 1, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over XP'686 and optionally in view of teaching reference "ASM Handbook: Vol. 2" p 1169.

XP'686 teaches a high purity Ti alloy with 0.009% Fe max (see Table on bottom of 1st page). XP'686 does not mention the presence of Co or Nb, and therefore is held to teach substantially zero Co and Nb. XP'686 is drawn to a high purity titanium alloy also known as "iodide Ti" or "electrolytic Ti" (see XP'686, 1<sup>st</sup> paragraph), and though XP'686 does not specify the limits of Nb, and Co, the examiner points out that "ASM Handbook Vol. 2" p 1169 mentions that "iodide Ti" or "electrolytic Ti" have (strict) known impurity limits of Fe, Si, Ca, Cu, Mg, Mn, Sn, Zr, C, O, N, and Cl, with a balance consisting of Ti (see Table 49, all the elements added together =100.000 %). Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686. XP'686 does not teach forming an oxide layer on said Ti alloy. Therefore, XP'686 is held to meet the limitation of a surface oxide film of 170Å or below.

Because XP'686 teaches an overlapping range of Fe, and because Nb and Co are not expected to be impurities of the high purity electrolytic Ti alloy taught by XP'686, it is held that XP'686 has created a prima facie case of obviousness of the presently claimed invention.

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***Response to Amendment/Arguments***

8. In the response March 14, 2006 applicant amended claim 1, canceled claim 2, submitted various arguments traversing the rejections of record.

Applicant's argument that the present invention is allowable over the prior art of record because the prior art does not teach or suggest the presently claimed limitation of a surface oxide film of 170Å or below has not been found persuasive. As stated above, XP'686 does not teach forming an oxide layer on said Ti alloy is mandatory. More particularly, XP'686 teaches the formation of a thin film is optional (see XP'686 1<sup>st</sup> column, "corrosion resistance"), and when desired, is formed by heating in air at temperatures >315°F (>157°C, in other words said oxide layer does not automatically occur under normal conditions). Therefore, because XP'686 teaches an embodiment with substantially no oxide layer, XP'686 meets the limitation of a surface oxide film of 170Å or below.

Similarly, because JP'573 teaches an embodiment with substantially no oxide layer, JP'573 meets the limitation of a surface oxide film of 170Å or below.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 8:30 am- 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCM

May 23, 2006



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